5.17 SUMMARY OF IMPACTS OF ALTERNATIVES SUBMITTED TO THE CORPS FOR CONSIDERATION

The individual sections of this chapter discuss the impacts to the various environmental resources and economic uses analyzed for the Study. In the introduction to Chapter 5, readers were encouraged to consider the relative effects among the alternatives, not the absolute values presented for the various resources or uses. This section of Chapter 5 synopsizes the impacts in a single table.

Table 5.17-1 presents the summary of impacts for the alternatives submitted to the Corps for consideration: the MLDDA, ARNRC, MRBA, MODC, BIOP, and FWS30 alternatives. The order of the listing of the environmental resources and economic uses corresponds with the order they are presented in this chapter to make it easier to refer back to the individual sections for more information on an individual resource or use. Individual numbers for each use/resource in the tables are computed by taking the average annual value of each alternative, subtracting the CWCP value for that specific use or resource from it, and dividing the difference by the CWCP value and then multiplying by 100 to get the percent change from the CWCP value. If a specific alternative increases the value from that of the CWCP, the percent change presented in the table is positive. If the value decreases relative to the CWCP, the percent change is negative. The reader is asked to focus attention on the "significant" changes (those greater than a plus or minus 1 percent and shaded a light gray (positive "significant" change) or shaded black with white lettering (negative "significant" change). (Note: A change of +1 represents changes up to 1.49 percent more than, or 101.49 percent of, the CWCP value due to rounding. Similarly, a -1 represents a change up to 1.49 percent less than, or 98.51 percent of, the value for the CWCP.) Caution must be used when focusing on the shaded percent changes because a resource may have a special meaning to an individual, and an "insignificant" change (+1, 0, or -1 in the tables) may be an important change to that person. Those individuals that situation applies to are encouraged to note whether the change is slightly positive (+1), no change (0), or slightly negative (-1). Readers are encouraged to review the table and to make their own "value" judgements.

Missouri River navigation for three of the alternatives has two percentage changes that represent the two extremes for impacts relative to the CWCP. These three alternatives have flows during the summer low-flow period that will generally be too low to provide navigation service. The smaller negative value represents the end of the spectrum where navigation would continue on both sides of the summer low-flow period. The second, greater negative value represents the other end of the spectrum when only sand and gravel mining and the movement of waterway materials to repair channel structures are the only viable forms of navigation using the river.

Two values are included for the spawning cue, one for the reach closest to Gavins Point Dam and one for Boonville, which is midway between Kansas City and the mouth of the Missouri River. For this resource category, the values for each reach cannot be summed to arrive at a single average annual value for that resource or use. A single value, the 25 percent exceedance value (value exceeded in just 25 percent of the years analyzed), was selected to be representative of the relative differences among the alternatives for connectivity. This value was selected because spring rises generally occur about one-third of the time or less. The 25 percent value would, therefore, provide better insight regarding differences among alternatives for the extent of the connectivity that would occur in years with spring rises. The 25 percent exceedance values for the individual reaches were summed to come up with a single value for each alternative on which the computations for the table could be computed.

Table 5.17-1. Impacts summary for the submitted alternatives.

	Percent Change from CWCP					
	MLDDA	**ARNRC**	**MRBA**	**MODC**	**BIOP**	**FWS30**
Missouri River						
Wetland Habitat	0	3	-1	1	-1	1
Riparian Habitat	2	-6	0	-3	-4	-6
Tern and Plover Habitat	5	37	36	36	74	70
Reservoir Young Fish Production	0	2	2	6	5	5
Reservoir Coldwater Fish Habitat	-3	9	3	5	7	7
River Coldwater Fish Habitat	-1	8	2	2	7	7
River Warmwater Fish Habitat	-3	-16	-9	-5	-15	-14
Native River Fish Physical Habitat	0	2	0	0	1	1
Historic Properties Index	3	-8	-3	-3	-4	-4
Floodplain Connectivity (25% Recurrence)	0	7	0	0	3	8
Shallow Water Fish Habitat	2	50	1	0	32	33
Spawning Cue - Gavins Point	11	83	28	28	94	167
Spawning Cue - Boonville	0	0	0	0	3	21
Flood Control	0	-1	-1	-1	-1	-1
Interior Drainage	-1	-4	-3	-2	-9	-12
Groundwater	-1	-15	0	5	-10	-15
Water Supply	0	-2	0	0	0	0
Hydropower	-1	1	1	1	2	2
Recreation	1	3	4	4	2	4
Navigation*	-4	-34 (-86)	-1	-1	-31 (-86)	-35 (-86)
Total NED Economics	0	0	0	0	0	0
Mississippi River						
Navigation Efficiency	14	13	3	-3	16	10

*1st value: Includes benefits if navigation continues before and after the split season.

2nd value (in parentheses): Includes remaining sand/rock benefits if navigation is essentially extinguished.; excludes O&M cost adjustments.

Light gray shading denotes a beneficial impact when compared to the CWCP.

Black shading denotes an adverse impact when compared to the CWCP.